

Title (en)
LASER BEAM ANALYSIS APPARATUS

Title (de)
LASERSTRAHL-ANALYSEVORRICHTUNG

Title (fr)
APPAREIL D'ANALYSE DE FAISCEAU LASER

Publication
EP 2561586 A4 20171206 (EN)

Application
EP 11766817 A 20110408

Priority
• US 75647610 A 20100408
• US 2011031776 W 20110408

Abstract (en)
[origin: US2011249256A1] An apparatus that enables real time measurement of the spatial profile, circularity, centroid, astigmatism and M2 values of a laser beam generated by a high power laser beam. The apparatus employs the optics used in a process application, including a focus lens and cover glass. An attenuation module includes a pair of high reflecting mirror plates disposed in parallel, spaced apart relation to one another at a common angle of incidence to the laser beam. A beam dump is positioned out of a path of travel of the laser beam and in receiving relation to light reflected by the first and second mirrors. A camera detects spots of light that pass through the first and second mirrors. A high power attenuator formed by a highly reflective mirror pair is positioned between the source and the attenuation module. A second embodiment includes a single mirror plate having highly reflective surfaces.

IPC 8 full level
H01S 3/10 (2006.01); **H01S 5/0683** (2006.01)

CPC (source: EP KR US)
B23K 26/705 (2015.10 - EP US); **G01J 1/04** (2013.01 - EP US); **G01J 1/0418** (2013.01 - EP US); **G01J 1/4257** (2013.01 - EP US); **G02B 27/106** (2013.01 - EP US); **G02B 27/108** (2013.01 - EP US); **G02B 27/144** (2013.01 - EP US); **H01S 3/10** (2013.01 - KR); **H01S 5/0683** (2013.01 - KR)

Citation (search report)
• [YA] JP 2008292404 A 20081204 - SHIMADZU CORP
• [YA] US 2002021728 A1 20020221 - NEWMAN PETER C [US], et al
• [A] US 6497490 B1 20021224 - MILLER GREGORY D [US], et al
• [L] M. SCAGGS, G. HAAS: "Real time laser beam analysis system for high power lasers", SPIE, PO BOX 10 BELLINGHAM WA 98227-0010, USA, vol. 7913, 22 January 2011 (2011-01-22), pages 791306-1 - 791306-9, XP040554314
• See references of WO 2011127400A2

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
US 2011249256 A1 201111013; **US 8237922 B2 20120807**; CN 103098319 A 20130508; CN 103098319 B 20160203; EP 2561586 A2 20130227; EP 2561586 A4 20171206; EP 2561586 B1 20200226; IL 222231 A0 20121231; IL 222231 A 20160630; JP 2013527979 A 20130704; JP 5726999 B2 20150603; KR 20130058685 A 20130604; US 8427633 B1 20130423; WO 2011127400 A2 201111013; WO 2011127400 A3 20120223; WO 2011127400 A4 20120419

DOCDB simple family (application)
US 75647610 A 20100408; CN 201180028392 A 20110408; EP 11766817 A 20110408; IL 22223112 A 20121009; JP 2013503987 A 20110408; KR 20127029255 A 20110408; US 2011031776 W 20110408; US 201213481288 A 20120525